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Introduction

Valve-Sparing Aortic Root Replacement

Valve-sparing aortic root replacement is becoming more common in children and adolescents and is typically performed for aortic aneurysm rather than valve disease. Most patients have congenital connective tissue disorders, such as Marfan syndrome and Loeys-Dietz syndrome, but increasingly, adolescents with enlarged aortas associated with bicuspid aortic valve are being evaluated and considered for prophylactic surgery to prevent rupture and dissection. Valve-sparing aortic root replacement exists in 2 major forms, the remodeling procedure and the reimplantation procedure. The remodeling operation reconstitutes the aortic root with a prosthetic tube graft that has 3 tongues sewn to the aortic annulus. Although it reproduces the shape of the sinuses, it does not stabilize the aortic annulus and can therefore lead to late valvar incompetence. For most children having aortic root replacement, aortic annulus stabilization is important for durability of the repair. Drs Cameron and Vricella describe their technique for the reimplantation procedure.

A "circumflex aorta" is a rare vascular ring caused by a right aortic arch with a left ligamentum arteriosum and a descending thoracic aorta that crosses posteriorly from right to left above the level of the tracheal carina. The trachea and esophagus are compressed from the right aortic arch, the left ligamentum, and the posterior crossing aorta. Division of the ligamentum would divide the ring, but would not relieve the compression produced from this abnormal vascular anatomy. Dr Russell and associates describe their technique for the aortic uncrossing procedure in which aorta is divided posteriorly, the descending aorta is mobilized, repositioned anteriorly, and anastomosed to ascending aorta to relieve the posterior airway and esophageal compression.

Chest Wall Sternoclavicular Resections

In this issue of *Operative Techniques,* Dr Gaetano Rocco from Naples, Italy discusses the role of resection and reconstruction for chest wall malignancies with an emphasis on sternal resection and reconstruction. Dr Rocco is a leading authority on these techniques and he shares with the reader his approaches and techniques. He also has graciously provided a video that highlights the technique. In the companion article, Dr Blair Marshall provides an excellent description of surgical approach to sternoclavicular joint infections. This is an increasingly common clinical problem, and there has not been a concise description of the technique in the literature. The approach described in this article is reproducible, and the utilization of the split pectoralis muscle rotational flap is an important adjunct to the procedure in many, although not all cases. Collectively, these articles offer a contemporary description of these procedures and would be of value to all practicing thoracic surgeons.

EVAR/TEVAR/TAVR, Large-Bore Access Considerations

Catheter-based image-guided approach to the aorta and the aortic valve has changed the paradigm for treatment of high-risk patients with aortic aneurysm and calcific aortic stenosis. To be in the driving seat, it is critical for the cardiothoracic surgical community to learn catheter and wire skills and be very familiar with these disruptive technologies. Given the clinical importance, this edition of the Operative Techniques in Thoracic and Cardiovascular Surgery includes 3 superb articles on large-bore access in transcatheter valve replacement and endovascular repair of abdominal and thoracic aorta. The first article by Dr Rene Bombien discusses large-bore access considerations for abdominal or thoracic endovascular aortic repair (EVAR or TEVAR) as well as for transcatheter valve replacement. Besides standard choice of access, alternative endovascular approaches are described. Access complications remain the most common morbidity associated with these large-bore devices, and this article details on how to deal with an access-related iliofemoral rupture. Next, Dr Martin Czerny and colleague describe clearly the technical details of EVAR procedure. Furthermore, the technique of more complex fenestrated and branched technology is discussed in this state-of-the-art contribution. In the third article, Dr Jacob DeLaRosa and coauthor provide a thorough technical description of TEVAR, reviewing advanced imaging protocols including intravascular ultrasound, as well as follow-up considerations.

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Editor

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